



Press Release

Detroit, April 16th, 2025

Marelli Wins 2025 Automotive News PACEpilot Award for its Fully Active Electromechanical Suspension

Marelli received a **2025 Automotive News PACEpilot Award** for its **Fully Active Electromechanical Suspension**, during a ceremony held on April 15th in Detroit, MI, USA. This award honors innovations by automotive suppliers that have not yet been commercialized but have the potential to revolutionize the future of mobility. The technology is based on an electromechanical system that actively manages the vertical dynamics of a vehicle's suspension in a new way, representing a cutting-edge alternative to traditional shock absorber solutions. Benefits include enhanced vehicle safety, improved performance and comfort, and high efficiency.

The system autonomously defines the best behavior of each vehicle's suspension, neutralizing vibration and vehicle body movements. It consists of four electronically controlled actuators which modulate each wheel's suspension and damping parameters in real-time to provide optimal handling and ride comfort balance. Information is processed in only 5 milliseconds to determine, through a smart algorithm, the actions required under different conditions. Thus, the system actively corrects and adapts to road irregularities and driving situations, ensuring stability and comfort, with a smooth "magic carpet" experience. This helps reduce motion sickness, especially during activities like reading or using a laptop, which are expected to become more common with the rise of autonomous driving.

Each of the four actuators is composed of a brushless motor and a high ratio reduction gear, that connects to the suspension arm, with the ability to actively move the suspension. The motors are controlled by dedicated inverters, which receive the stroke target from a central unit hosting the vehicle dynamics software. This advanced software calculates the most suitable target action for each actuator based on the information collected from sensors (accelerometers and stroke sensors) that are mounted on the suspension, as well as from other electronically controlled systems installed in the car.

The system is entirely oil-free and designed for energy harvesting and electric power recovery, achieving up to 80% energy efficiency compared to passive or semi-active systems. Therefore, it can provide all functionality at almost zero "energy cost" for the vehicle. The technology, which is adaptable to various vehicle architectures, has reduced volume and weight, allowing more flexibility for carmakers in design. It also simplifies manufacturing processes, increasing time to market.

"It is with great pleasure and a touch of pride that I accept the highly coveted PACE Pilot award," stated Antonio Ferrara, President of Marelli's Ride Dynamics business. "This award acknowledges our revolutionary fully active electromechanical suspension technology and is a testament to our



commitment to leading the rapid evolution of vehicle dynamics. We are proud to be an innovation partner for our customers around the world, thanks to our cutting-edge technological vision, which aims to enhance comfort and safety for high-end, hybrid, electric, and autonomous vehicles. .”

About Marelli

Marelli is a global mobility technology supplier to the automotive sector. With a strong and established track record in innovation and manufacturing excellence, our mission is to transform the future of mobility through working with customers and partners to create a safer, greener, and better-connected world. With around 45,000 employees worldwide, the Marelli footprint includes over 150 sites globally.